SWARNANDHRA
COLLEGE OF ENGINEERING & TECHNOLOGY
(AUTONOMOUS)
Accredited by National Board of Accreditation, AICTE, New Delhi,Accredited by NAAC with "A" Grade – 3.32 CGPA,Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi,Permanent Affiliation to JNTUK, Kakinada
Seetharampuram, W.G.DT., Narsapur-534280, (Andhra Pradesh)

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

TEACHING PLAN

Course Code	Course Title	Semester	Branches	Contact Periods /Week	Academic Year	Date of commencement of Semester
20AM5E01	PRINCIPLES OF SOFTWARE ENGINEERING	V	AI&ML A&B	5	2024-25	03-06-2024

COURSE OUTCOMES	
CO1.	Identify, formulate the various software engineering concepts.[K4]
CO2.	Analyze different software development process models.[K4]
CO3.	Analyze and specify software requirements with various stake- holders of a software development project.[K4]
CO4.	Apply systematic procedure for software design and deployment.[K3]
CO5.	Compare and contrast the various testing methods and art of debugging.[K4]

UNIT	Outcomes / Bloom's Level	Topics No.	Topics/Activity	Text Book / Reference	Contact Hour	Delivery Method
SOFTWARE AND SOFTWARE ENGINEERING						
I	**CO1**. Identify, formulate the various software engineering concepts	1.1	Define Software and characteristics	T1	1	Chalk and Talk
		1.2	Software application domains	T1	1	
		1.3	Legacy software	T1	1	
		1.4	Software engineering definition	T1	1	
		1.5	Layered technology	T1	1	
		1.6	Software process	T1	1	
		1.7	Generic process framework activities	T1	1	
		1.8	Umbrella activities	T1	1	
		1.9	Software engineering practices and essence of practice	T1	1	
		1.10	Software myths and Reality	T1	1	
		1.11	Generic process model	T1	1	
		1.12	Capability, Maturity Model Integration	T1	1	Chalk and Talk
				Total	**12**	
PROCESS MODELS						
II		2.1.	Process assessment and improvement	T1	1	Chalk and Talk

	CO2. Analyze different software development process models	2.2	Prescriptive Process models	T1	1	
		2.3	Waterfall Model	T1	1	
		2.4	Incremental Process Model	T1	1	
		2.5	Evolutionary Process Models	T1	1	
		2.6	Prototyping	T1	1	
		2.7	Spiral model	T1	1	
		2.8	The Unified Process	T1	1	
		2.9	Personal and Team process models	T1	1	
		2.10	Agility and the cost of change	T1	1	
		2.11	Agility Principles	T1	1	
		2.22	the politics of agile development	T1	1	
			Revision of human factors			PPT
				TOTAL	**12**	
REQUIREMENTS ANALYSIS AND SPECIFICATION						
III	**CO3**. Analyze and specify software requirements with various stake holders of a software development project	3.1	Functional Requirements	T1	1	Chalk & Talk
		3.2	Non- Functional Requirements	T1	1	
		3.3	Software Requirements Document	T1	1	
		3.4	Requirements Specification	T1	1	
		3.5	Requirements Engineering	T1	1	
		3.6	Establishing the Ground work	T2	1	
		3.7	Eliciting Requirements (elicitation)	T2	1	
		3.8	Developing Use cases	T2	1	
		3.9	Requirements Planning	T2	1	
		3.10	Requirements Change management	T1	1	
			Revision of requirements management		1	PPT
				TOTAL	**11**	
SOFTWARE DESIGN						
IV	**CO4**.Apply systematic procedure for software design and deployment	4.1	Design process,	T1	1	Chalk & Talk
		4.2	Design concepts:	T1	1	
		4.3	Abstraction,	T1	1	
		4.4	Architecture, Patterns,	T1	1	
		4.5	Separation of Concerns,	T1	1	
		4.6	Modularity and Information hiding	T1	1	
		4.7	Functional independence,	T1	1	
		4.8	Refinement and Aspects,	T1	1	

		4.9	Object oriented design concepts,	T1	1	
		4.10	Data Design Elements	T1	1	
		4.11	Architectural Design elements	T2	1	
		4.12	Interface Design Elements,	T2	1	
		4.13	Component-Level Design Elements,	T2	1	
		4.14	Designing Class Based Components:	T2	1	
		4.15	Basic Design Principles,	T2	1	PPT
		4.16	Cohesion and coupling.	T2	1	PPT
		Revision of Object oriented design concepts				PPT
				TOTAL	**16**	
TESTING						
V	CO5. Compare and contrast the various testing methods and art of debugging	5.1	Elements of software quality assurance	T2	1	Chalk & talk
		5.2	SQA Tasks and Goals.	T2	1	
		5.3	The strategies for Conventional Strategies	T2	1	
		5.4	Unit Testing – Integration Testing	T2	1	
		5.5	Test Strategies for Object- Oriented Software	T2	1	
		5.6	Software testing fundamentals, white box testing- Basis path testing	T2	2	
		5.7	Flow graph Notation, independent Program paths	T2	1	
		5.8	3The Debugging process	T2	1	
		5.9	Psychological Considerations	T2	1	PPT, Videos
		5.10	Debugging Strategies	T2	1	
		5.11	Correcting the error.	T2	1	
				TOTAL	**14**	
				CUMULATIVE PROPOSED PERIODS	**64**	

Text Books:

S. No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION
T1	A practitioner's Approach- Roger S. pressman, Software Engineering, 8th edition, McGraw-Hill international Edition, 2014.
T2	IanSommerville, Software Engineering, 10th Edition, Pearson Education Asia, 2017.

Reference Books:

S. No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION

R1	Pankaj Jalote's Software Engineering, 9th Edition A Precise Approach 2010
R2	Shely Cashman Rosenblatt, Systems Analysis and Design,9th Edition, Thomson publications, 2016.
R3	Rajib Mall, Fundamentals Of Software Engineering, 5th Edition, PHI, 2018.
Web Details	
	https://nptel.ac.in/courses/106101061/
	https://nptel.ac.in/courses/106105182
	https://archive.nptel.ac.in/courses/106/101/106101061/
	https://onlinecourses-archive.nptel.ac.in/noc18_cs43
	https://archive.nptel.ac.in/content/syllabus_pdf/106105182.pdf

		Name	Signature with Date
i.	Faculty	B.Haritha	
ii.	Course Coordinator	Dr.G.Sudhakar	
iii.	Module Coordinator	K.Jai Prakash	
iv.	Program Coordinator	Dr.B.Rama Krishna	

Principal